

in a more effectual manner. "This method of stopping the impetuous ravages of water," says Mr. Holmes, "he had practised before with success on the river Calder; on my calling on him in the neighbourhood of Wakefield, he showed me the effects of a great flood, which had made a considerable passage over the land; this he stopped at the bank of the river, by throwing in a quantity of large rough stones, which with the sand, and other materials washed down by the river, filling up their interstices, had become a barrier to keep the river in its usual course."

In 1771 Smeaton and Holmes made a joint purchase of the water-works for supplying Deptford and Greenwich with water. On examining the books of the former proprietors, it appeared to have been a losing concern during many years; but the skill of Smeaton soon brought the undertaking into such a state as to be of general use to those for whom it was intended, and moderately profitable to himself and partner. In noticing this subject Mr. Holmes makes a few general remarks on the character of Smeaton:—"His language either in speaking or writing was so strong and perspicuous, that there was no misunderstanding his meaning, and I had that confidence in his abilities as never to consider any plan of improvement which he proposed, but only to see it executed with scrupulous exactness; at the same time, he was so open to reason in all matters, that during a constant communication of our opinions for upwards of twenty years, after we had laid them fully before each other we always agreed, and never had the slightest difference."

It must be remembered that Smeaton lived before the time when the genius of Watt had rendered the steam-engine the useful and obedient servant of man; and consequently that much of the power now furnished by steam was then supplied by the wind. Hence the mechanics of windmills was an important study to the engineer, and Smeaton erected a vast variety of mills in which he turned to useful account the results of his experiments in 1752 and 1753. His usual habit was to confirm the conclusions of theory by direct experiment. He also erected a steam-engine at Ansthorpe, and made experiments thereon to ascertain the power of Newcomen's engine, which he improved and brought to a far greater degree of certainty both in its construction and powers.

During many years the opinion of Smeaton was held in such high esteem, that no great works were undertaken throughout the kingdom without first applying to him; he was constantly consulted in parliament, and was regarded as an ultimate reference on all difficult questions connected with his profession. It was his constant practice to make himself fully acquainted with every subject before he would engage in it, and then his known integrity and lucid powers of description secured the respect and attention of all. In the courts of law he was frequently complimented by Lord Mansfield and others for the new light he threw on difficult subjects.

About the year 1765 Smeaton's health began to decline, and he then endeavoured to retire from business in order to gain time to publish an account of his inventions and works. This was one of the wishes nearest to his heart, for as he often said, "he thought he could not render better service to his country than by doing that." He had just completed his account of the Eddystone lighthouse when he was prevailed on to continue his services as engineer to the trustees for Ramsgate harbour. The works at Ramsgate were begun in 1749, but had been conducted with very indifferent success until Smeaton was called in to superintend them in 1774. He completed the magnificent pier and harbour of this place in 1791, and thus established a secure and much needed place of shelter in the Downs.

A man whose life is so beneficially devoted to the service of the public can scarcely hope to enjoy leisure and retirement during which he may look back upon the past, and leave a written record of his exertions. Smeaton was so constantly and urgently employed, that he could not achieve much with his pen. On the 16th September, 1792, he was seized with an attack of paralysis, induced by over exertion, and this attack carried him to the grave on the 25th of the next month, in the 69th year of his age.

During his illness he dictated several letters to his old friend Mr. Holmes. In one of them he describes minutely his health and feelings, and says, "in consequence of the foregoing, I conclude myself nine-tenths dead, and the greatest favour the Almighty can do (as I think) will be to complete the other part, but as it is likely to be a lingering illness, it is only in His power to say when that is likely to happen." His daughter, Mrs. Dickson, says that he always apprehended the attack which terminated his life, as it was hereditary in his family. He dreaded it only as it gave the melancholy possibility of outliving his faculties or the power of doing good; or, to use his own words, "lingering over the dregs after the spirit had evaporated." Indeed, the decay of his mental faculties seems to have been that which he most dreaded. He would sometimes complain of slowness of apprehension, and would then excuse it with a smile, saying, "it could not be otherwise, the shadow must lengthen as the sun went down." When seized with paralysis he was resigned to the event, anxious to soften any alarm to his family, and was thankful that his intellect was spared. But his invariable wish was to be released. He expressed particular pleasure in seeing the usual occupations of his family resumed; and reading, drawing, music, and conversation excited the same interest and the same cheerful and judicious observations as ever. One evening he was requested to explain some phenomena respecting the moon, which was seen from the room shining brightly. He gave a full explanation, then fixed his eyes full upon the object in question, and after regarding it steadfastly for some time, he observed, "How often have I looked up to it with inquiry and wonder, and to the period when I shall have the vast and privileged views of an hereafter, and all will be comprehension and pleasure."

We learn from his daughter Mrs. Dickson, that early in life Smeaton attracted the notice of the eccentric Duke and Duchess of Queensbury, on account of the strong personal likeness which he bore to their favourite (Gay the poet). Their first acquaintance was made in a singular manner: it was at Ranelagh when walking with Mrs. Smeaton, he observed an elderly lady and gentlemen gaze steadily upon him, they stopped and the duchess said, "Sir, I don't know who you are, or what you are, but so strongly do you resemble my poor dear Gay, that we must be acquainted; you shall go home and sup with us, and if the minds of the two men accord as do the countenances, you will find two cheerful old folks who can love you well, and I think (or you are an hypocrite) you can as well deserve it." The invitation was accepted, and as long as the duke and duchess lived the friendship was cordial and uninterrupted. During his visits cards were sometimes introduced. Smeaton detested cards, and could not confine his attention to the game. On one occasion the stakes were already high, and it fell to Smeaton to double them when, neglecting to deal the cards, he was busily occupied in making some calculations on paper which he placed upon the table. The duchess asked eagerly what it was, and Smeaton replied coolly, "You will recollect the field in which my house stands may be about five acres three roods and seven perches, which, at thirty years' purchase, will be just my stake, and if your grace will make a duke of me, I presume the winner will not dislike my mortgage." The joke and the lesson had their effect, for they never played again but for the merest trifle.

Smeaton procured a situation in a public office for a clerk in whom he placed the greatest confidence, and jointly with another became security for him to a considerable amount. This man committed the crime of forgery, was detected, and given up to justice. Mrs. Dickson says, "The same post brought news of the melancholy transaction, of the man's compunction and danger, of the claim of the bond forfeited, and of the refusal of the other person to pay the moiety." Being present when he read his letters, which arrived at a period of Mrs. Smeaton's declining health, so entirely did the command of himself second his anxious attention to her, that no emotion was visible on their perusal, nor, till all was put into the best train possible, did a word or look betray the exquisite distress it occasioned him. In the interim, all which could soothe the remorse of a prisoner, every means which could save (which did, at least from public execution),

were exerted for him, with a characteristic benevolence, active and unobtrusive."

Smeaton was a man of indefatigable industry and great moral probity. With ample opportunity of amassing wealth, he rendered its acquisition but a secondary object on all occasions; his first aim always being to execute the task intrusted to him in the most skilful and perfect manner. Had his object been to amass a fortune, he might have received many lucrative appointments besides those which he actually held. The empress Catherine of Russia attempted to secure his services for her own country by most magnificent offers; but Smeaton preferred to dedicate his time and talents to the service of his country. "The disinterested moderation of his pecuniary ambition," says his daughter, "every transaction in private life evinced; his public ones bore the same stamp; and after his health had withdrawn him from the labours of his profession, many instances may be given by those whose concerns induced them to press importunately for a resumption of it; and when some of them seemed disposed to enforce their entreaties by further prospects of lucrative recompense, his reply was strongly characteristic of his simple manners and moderation. He introduced the old woman who took care of his chambers in Gray's Inn, and shewing her, asserted 'that her attendance sufficed for all his wants.' The inference was indisputable, for money could not tempt that man to forego his ease, leisure, or independence, whose requisites of accommodation were compressed within such limits! Before this, the princess Dashkew made an apt comment upon this trait of his character; when, after vainly using every persuasion to induce him to accept a carte blanche from the empress of Russia as a recompense for directing the vast projects in that kingdom—she observed 'Sir, you are a great man, and I honour you! you may have an equal in abilities, perhaps, but in character you stand single. The English minister, Sir Robert Walpole, was mistaken, and my sovereign has the misfortune to find one man who has not his price.'"

In all the social duties of life Smeaton was most exemplary; and he was a lover and encourager of real merit in whatever station of life he found it. To strangers, his mode of expression appeared warm and even harsh; but Mr. Holmes refers to the intense application of his mind, which was always in the pursuit of truth, or engaged in investigating difficult subjects; hence, when any thing was said that did not tally with his ideas, he would sometimes break out hastily. As a friend, he was warm, zealous, and sincere; as a companion, always entertaining and instructive, and none could spend their time in his company without improvement. In his person Smeaton was of middle stature, but broad and strong-made, and possessed of an excellent constitution. He was remarkable for the plainness and simplicity of his manners.

After his death, his papers, consisting of plans, reports, and treatises, on almost every branch of engineering, were published by the Society of Civil Engineers.

THE MORMON TEMPLE AND ITS BUILDERS.

At the summit, overlooking the whole landscape for nearly twenty-five miles in all directions, stands the Mormon temple, the largest structure in any of the western states. When completed, it is assumed that the entire cost will not vary much from four hundred thousand dollars. Nothing can be more original in architecture—each of its huge pilasters rests upon a block of stone, bearing in relief on its face the profile of a new-moon, represented with a nose, eye, and mouth, as sometimes seen in almanacs. On the top, not far from fifty feet high, is an ideal representation of the rising sun, which is a monstrous prominent stone face, the features of which are colossal, and singularly expressive. Still higher are two enormously large hands, grasping two trumpets, crossed. These all stand out on the stone boldly. Their finish is admirable, and as complete as any of the best specimens of chiselling on the Girard College, at Philadelphia. The interior is to be one vast apartment, about 128 feet by 80, simply sub-